

Serial No. 09/787,248

Docket No. H 3381 PCT/US

Amendments to the Claims

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15. (Currently amended) A sprayable hotmelt adhesive comprising:

A) 35 weight percent to 50 weight percent of [one or more] a mixture of poly- α -olefins, wherein [the poly- α -olefin or] the mixture of poly- α -olefins has a softening point of 70°C to 130°C and a melt viscosity at 190°C of 1,000 mPas to 20,000 mPas;

B) 5 weight percent to 60 weight percent of at least one oil having a viscosity of 20 to 300 mPas at 20° C; and

C) 20 weight percent to 60 weight percent of at least one hydrocarbon resin having a softening range of 70°C to 140°C;

wherein the hotmelt adhesive has a viscosity of 500 mPas to 4,000 mPas at 150°C.

16. The hotmelt adhesive of claim 15 wherein at least one of the poly- α -olefins has a weight average molecular weight, as determined by gel permeation chromatography, of at most 100,000, or a number average molecular weight, as determined by gel permeation chromatography, of at least 4,000, wherein the difference between the weight average and the number average molecular weight is no more than six times the number average molecular weight.

17. The hotmelt adhesive of claim 15 wherein the hotmelt adhesive viscosity ranges from 700 mPas to 1,900 mPas at 150°C, as measured in accordance with ASTM D 3236-88.

18. (Currently amended) The hotmelt adhesive of claim 15, wherein [the poly- α -olefin or] the mixture of poly- α -olefins is substantially amorphous and at least one of the poly- α -olefins comprises polymerized units of:

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F (i) 3 weight percent to 75 weight percent of an α -olefin containing 4 to 10 carbon atoms,

(ii) 25 weight percent to 95 weight percent of propene, and

(iii) 0 to 20 weight percent of ethene.

19. (Currently amended) The hotmelt adhesive of claim 15, wherein [the poly- α -olefin or] the mixture of poly- α -olefins has a melt viscosity at 190°C of 2,000 mPas to 15,000 mPas.

20. The hotmelt adhesive of claim 15, wherein at least one of the poly- α -olefins has a density of less than 0.9 g/cm³, a needle penetration of 8 mm to 4.0 mm, and a weight average molecular weight, as determined by gel permeation chromatography, of at least 4,000, wherein the difference between the weight average and the number average molecular weight is no more than six times the number average molecular weight.

21. The hotmelt adhesive of claim 15, wherein the hotmelt adhesive comprises at least one first poly- α -olefin having a melt viscosity of 40,000 mPas to 60,000 mPas, and at least one second poly- α -olefin having a melt viscosity of 3,000 mPas to 10,000 mPas at 190°C.

22. The hotmelt adhesive of claim 15, wherein the oil comprises a medicinal white oil.

23. The hotmelt adhesive of claim 15, wherein the hydrocarbon resin comprises a hydrocarbon resin having 5 to 9 carbon atoms.

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24. The hotmelt adhesive of claim 15, wherein the hotmelt adhesive further comprises an additive selected from a heat or light stabilizer, an optical brightener, an antistatic agent, a lubricant or antiblocking agent, a nucleating agent, a dye, a pigment or a flame retardant, or combinations thereof.

25. The hotmelt adhesive of claim 15, wherein the combined amount of the oil and the hydrocarbon resin is at least 30 weight percent, based on the total weight of the poly- α -olefins, the oil and the hydrocarbon resin.

26. The hotmelt adhesive of claim 15, wherein the poly- α -olefins, the oil, and the hydrocarbon resin are selected so that the mixture of the poly- α -olefins, the oil, and the hydrocarbon resin has a viscosity at 100°C ranging from 5 Pas to 15 Pas, wherein the viscosity may vary plus or minus 15% from the viscosity range and wherein the viscosity is measured at a shear rate ranging from 2 sec⁻¹ to 250 sec⁻¹.

27. A method of bonding sanitary products comprising (a) applying the hotmelt adhesive of claim 15 to one or more substrate materials suitable for a sanitary product and (b) contacting the substrate materials to be bonded to provide a composite sanitary product.

28. The method of claim 27, wherein at least one of the poly- α -olefins has a weight average molecular weight, as determined by gel permeation chromatography, of at most 100,000, or a number average molecular weight, as determined by gel permeation chromatography, of at least 4,000, wherein the difference between the weight average and the number average molecular weight is no more than six times the number average molecular weight.

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29. The method of claim 27 wherein the sanitary product is a diaper, panty liner or a sanitary napkin.

30. A method of bonding a film and a nonwoven material comprising (a) applying to the film or nonwoven, the hotmelt adhesive of claim 15 at an application temperature ranging from 120°C to 180°C and at an application weight ranging from 2 g/m² to 10 g/m² and (b) contacting the film and nonwoven material to be bonded to provide a composite material.

31. The method of claim 30 wherein at least one of the poly- α -olefins has a weight average molecular weight, as determined by gel permeation chromatography, of at most 100,000, or a number average molecular weight, as determined by gel permeation chromatography, of at least 4,000, , wherein the difference between the weight average and the number average molecular weight is no more than six times the number average molecular weight.

32. The method of claim 30 wherein the hotmelt adhesive is applied at a rate of 50 m/min to 400 m/min, the application temperature of the adhesive ranges from 140°C to 160°C, and the application weight ranges from 3 g/m² and 4 g/m².

33. The method of claim 30 wherein the film is a polyolefin film.

34. (Currently amended) A process for preparing a hotmelt adhesive comprising
A) mixing raw materials comprising

i) 35 [30] weight percent to 50 [70] weight percent of [one or more] a mixture of poly- α -olefins, wherein [the poly- α -olefin or] the mixture of poly- α -olefins has a softening point of 70°C to 130°C and a melt viscosity at 190°C of 1,000 mPas to 20,000 mPas;

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ii) 5 weight percent to 30 weight percent of at least one oil having a viscosity of 20 to 300 mPas at 20°C; and

iii) 20 weight percent to 60 weight percent of at least one hydrocarbon resin having a softening range of 70°C to 140°C; wherein the mixing is performed at a temperature ranging from 150 to 200°C and in an inert gas atmosphere, or in a vacuum, or combinations thereof; and

B) forming a hotmelt adhesive having a viscosity of 500 mPas to 4,000 mPas at 150°C.

35. The process of claim 34 wherein at least one of the poly- α -olefins has a weight average molecular weight, as determined by gel permeation chromatography, of at most 100,000, or a number average molecular weight, as determined by gel permeation chromatography, of at least 4,000, wherein the difference between the weight average and the number average molecular weight is no more than six times the number average molecular weight.
